

ADITHYA SWAMINATHAN

29 Drexel Hill Drive, Kendall Park, New Jersey, 08824 | (609) 455-4144 | adithya1431@gmail.com | adithya9@illinois.edu |
Github: <https://github.com/adiswami14> | LinkedIn: <https://www.linkedin.com/in/adiswami14/>
Website: <https://adiswami14.github.io>

EDUCATION

University of Illinois, Urbana-Champaign, Champaign, IL — Class of 2024

Bachelor of Arts and Science in Computer Science & Mathematics

GPA: 4.0

Achievements: LAS James Scholar, LAS Haan Scholarship Recipient

Relevant Coursework: Software Design Studio, Discrete Structures, Computer Architecture, Data Structures, Systems Programming

South Brunswick High School, South Brunswick, NJ — Class of 2020

GPA: 4.47

Achievements: National AP Scholar, National Commended Student Award, National Honors Society Member, Math Honors Society, French Honors Society, High Honor Roll Member

Relevant Coursework: Data Structures, Mobile App Development, Real/Complex Analysis, Multivariable Calculus, Differential Equations, Linear Algebra

EXPERIENCE

Undergraduate Data Analytics Researcher, Champaign, IL | Aug 2021 - Present

- Web-scraped AP College Poll ballot data for college basketball to construct model that can predict match outcomes
- Analyzed accuracy of model in predicting games in a naïve fashion
- Experimented with sensitivity of Poll model using different vote aggregation methods
- Delved into voter ballot spread using distance measures such as Spearman Rho and Kendall Tau

Kellogg's Software Development Intern, Battle Creek, MI | May 2021 – Aug 2021

- Automated data validation and storage using pandas, numpy, and openpyxl libraries
- Utilized Python to access emails using the IMAP protocol, integrating Ansible automation process with ServiceNow REST API to raise incidents remotely
- Debugged and rewrote a large codebase for a React JavaScript application for external clients that was officially released in iOS App Store
- Created a PowerShell application to automate the installing and running of certain applications and software updates on a set of servers

Illinois Geometry Lab Undergraduate Researcher, Champaign, IL | January 2021 – Jun 2021

- Worked on creating interactive fractal-based visualizations in the Wolfram Mathematica computing system
- Worked in a team setting to publish project on Wolfram Demonstrations website (see below)
- "Fractal Curves Generated by the Sum-of-Digits Function", Wolfram Demonstrations Project, June 2021
<http://demonstrations.wolfram.com/FractalCurvesGeneratedByTheSumOfDigitsFunction/>

PROJECTS

InfiniteWellSimulator (C++)

- Uses Quantum Physics theories to provide an in-depth experience akin to “particle in a box” simulation
- Graphs spatial and momentum wavefunctions for quantum particle in question
- Provides user control over all aspects of the simulation (from particle specs to lighting of simulation)
- Utilizes Cinder open-source library as source for GUI

Dagger (C++)

- Given a main file in a repository of code, analyzes file dependencies and generates a graph
- Colors the nodes in the graph that are involved in a cyclical dependency, discovered through a recursive DFS-based version of Tarjan's algorithm
- Utilizes GraphViz to create the graphs, Catch2 library for testing, and Dired for file management

ZeroRobotics (C)

- Manipulates angular velocity and acceleration of bot to program hooking function for interlocking two SPHERES satellites by tracking Euler angles and quaternions, working in real time aboard the ISS
- Performs multiple rounds of iterative testing to perfect SPHERE's movement using Dijkstra's Algorithm

LandmarkHelper (Java, Android Studio, Google Cloud)

- Able to recognize landmarks based on the picture fed into the system by implementing Cloud Vision API
- Authenticates user, and stores landmarks in user's very own dataset using Firebase
- Utilizes Geolocation API to give activities to explore near landmark

SKILLS

Languages: C/C++, Java, HTML/CSS, Python, R, JavaScript, Shell, Verilog, Mathematica, PowerShell, SQL, LaTeX

Cloud Services: Google Cloud (Cloud Vision API, Geolocation API, Firebase), Office365, Box

Tools/Frameworks: Ansible, Git, Android Studio, React, React Native, Expo, Arduino

Certifications: SAFe 5 Scrum Master